

AC 4411 (1) COLCHESTER

BOROUGH OF



COLCHESTER.

URBAN DISTRICT.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

FOR THE YEAR

1910.

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AND

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Report of the Medical Officer of Health for the year 1910.

TO THE MAYOR, ALDERMEN AND COUNCILLORS OF THE
BOROUGH OF COLCHESTER.

SIR AND GENTLEMEN,

I have the honour to submit this my second Annual Report upon the health and sanitary conditions of the Borough for the year 1910.

The following figures are for comparison with other towns. They give shortly the more important figures connected with the population, birth and death rates.

Population (at the middle of 1910)	...	...	42,275		
Birth Rate	...	...	22·6	per 1,000 inhabitants	
Death Rate	...	...	12·0	"	"
Average Death Rate for the last 10 years	...	...	13·4	"	"
Infantile Death Rate	...	...	90	"	children born
Zymotic (Infectious Diseases) Death Rate	...	...	·56	"	inhabitants
Respiratory Diseases	"	"	1·75	"	"
Phthisis (Consumption)	"	"	1·06	"	"
Other Tubercular Diseases	"	"	·33	"	"
Malignant Diseases (Cancer)	"	"	·78	"	"
Area of Borough	...	...	11,324	acres	

During the year the Public Health Acts, Amendment Act, 1907, was very fully considered by the Health Committee and certain sections recommended to the Council for adoption.

POPULATION.

The Population, estimated by the method of the Registrar General, to the middle of the year was 42,275, giving an increase of 440 over that of last year.

As the census is taken during 1911 it will be possible to note how far this number is wrong. There is every reason to expect that after a ten years' interval the population will have shifted a good deal, and though Colchester has not, during those ten years, been subject to any great influx or exodus of persons yet one cannot expect an estimation, based upon figures of more than ten years ago, to be very accurate. This is the more to be regretted as so many of the rates in connection with death and disease are calculated from the number of the population. If it were possible for the census to be taken every five, instead of every ten years, all these figures would be of very definite value each year, instead of only being of value for the years immediately following a census and becoming more incorrect as they approach the next census year.

The natural increase—that is, the increase of births over deaths—was 407.

The estimated population includes the Garrison and families living in barracks.

Colonel A. P. O'Connor has again kindly supplied the following details of the average daily strength of the Colchester Garrison for the year.

Officers	...	...	114
Men	...	...	3,395
Women	...	...	307
Children	...	...	528
Average Daily Total Strength	...	...	4,344

This shows a decrease of 169 when compared with the average daily total for 1909.

BIRTHS.

The total number of births registered in 1910 was 958, being 40 less than in the previous year. The birth-rate was 22·6 per 1,000 inhabitants. This is a decrease of 1·2 from the rate of 1909, which was 23·8, and is remarkably low even for Colchester, which, it is to be regretted, has a lower birth-rate than that of England and Wales.

Of the children born 503 were boys and 455 girls. They were distributed in the several Wards as follows:—North 157, South 358, East 250, West 193. The same number of births as in 1909 were illegitimate—that is 36 or 3·7 per cent. of the total births.

Application was proposed to be made for the adoption in the Borough of the Notification of Births Act, 1907. In connection with this Act a health visitor will shortly be appointed.

Leaflets, dealing with the feeding of infants and the prevention of diarrhœa, have, as in previous years, been sent to all the mothers of infants.

Parents occasionally apply at the Public Health Offices for copies of these leaflets or for more detailed instruction in the care of their infants. A health visitor will be of great assistance in this work and it is to be hoped that in time the Health Department will be in close touch with all poor mothers of young children.

Since the end of June, 1910, very material help has been voluntarily given to the Department by Miss Sasse, who, from that time to the end of the year, was indefatigable in distributing these leaflets to mothers and explaining them carefully, recommending boat-shaped bottles in place of the unclean long-tube bottles, and in general doing the work of a health visitor, so far as an untrained person is able. I take this opportunity of tendering my best thanks to her for her valuable assistance.

In connection with this work over 1,000 visits were made, many infants being visited several times. The following list shows the results of Miss Sasse's inquiries and advice:—

	Under 3 mths.	3-6 mths.	6-9 mths.	9-12 mths.	Total.
Breast fed entirely	353	54	119	65	591
Cow's Milk and Water or Barley Water	46	19	36	12	113
Breast and other Foods	4	4	..	..	8
Condensed Milk	14	4	16	7	41
Patent Foods	9	2	5	2	18
Other Foods	12	..	..	12	24
	<hr/> 438	<hr/> 83	<hr/> 176	<hr/> 98	<hr/> 795

In 60 instances the parents of infants had left the town before the visit was made. In 34 instances the leaflets were left and no information obtained, either because the parents were unwilling to give any or because they were always away from the house when Miss Sasse called.

It is seen from the above figures that 78 per cent. of the infants under six months were breast fed entirely. This is very satisfactory, but it is not so satisfactory that 65 out of 98 children between 9 and 12 months old were still being fed from the breast only.

Enquiries were also made as to the types of bottle used in those cases where the infants were not breast fed entirely. Out of 175 infants 123 were fed from the boat-shaped bottle, 34 from bottles with long tubes, and 18 from spoons. The boat-shaped bottle appears to be steadily gaining the confidence of parents, the percentage of infants fed from such bottles increasing year by year.

DEATHS.

In the Borough 551 deaths were registered during the year. In 43 cases the deceased was not a resident, and so, for calculating the death-rate, these may be subtracted; also 3 Colchester residents died in institutions outside the Borough and therefore this number must be added. Thus the corrected

number of deaths is 511, and this gives a nett death-rate of 12·0 per 1,000. This rate is 0·2 higher than last year, and the increase is accounted for by the number of deaths due to Epidemic Influenza, there being 19 more deaths from this disease than in the previous year. The deaths from Diarrhoea are a great deal lower, but unfortunately 12 deaths occurred from Whooping Cough (see Table IV.)

Among the military population 28 deaths took place.

Death-rates for years 1878-1910.

Year.	Population.	Number of registered deaths.	Death-rate per 1,000.		Death-rate for England and Wales.
			Crude.	Nett.	
1878	27,806	580	20·85	...	21·6
1879	28,010	538	19·20	...	20·7
1880	28,220	533	18·88	...	20·5
1881	28,505	488	17·12	...	18·9
1882	29,080	564	19·39	...	19·6
1883	29,660	478	16·11	...	19·6
1884	30,250	575	19·01	...	19·7
1885	30,854	562	18·21	...	19·2
1886	31,470	635	20·18	...	19·5
1887	32,086	526	16·39	...	19·1
1888	32,665	557	17·05	...	18·1
1889	33,387	529	15·84	...	18·2
1890	34,050	581	17·06	...	19·5
1891	34,650	540	15·6	...	20·2
1892	35,000	622	17·76	...	19·0
1893	35,364	499	14·11	...	19·2
1894	35,730	434	12·14	...	16·6
1895	36,096	719	19·9	...	18·7
1896	36,490	520	14·2	...	17·1
1897	36,843	577	15·6	...	17·4
1898	37,222	625	16·79	16·1	17·5
1899	37,605	601	15·9	15·1	18·2
1900	37,991	597	15·7	15·2	18·2
1901	38,383	643	16·7	16·4	16·9
1902	38,778	555	14·3	13·2	16·2
1903	39,300	536	13·64	12·7	15·4
1904	39,700	670	16·87	15·8	16·2
1905	40,120	539	13·43	12·5	15·2
1906	40,540	537	13·2	12·5	15·4
1907	40,970	514	12·6	12·25	15·0
1908	41,450	515	12·4	11·65	14·7
1909	41,835	516	12·3	11·8	14·5
1910	42,275	551	13·0	12·0	13·4

With this table should be studied the table on page 22 giving the causes of, and ages at, death during 1910.

Deaths in Public Institutions in the Borough :—

				<i>Residents.</i>	<i>Non-Residents.</i>		<i>Total.</i>
Essex County Hospital	...	..	...	36	...	32	68
Colchester Workhouse	...	...	...	48	...	0	48
Eastern Counties Asylum	...	..	...	1	...	9	10
Mile End Infectious Hospital	...	...	...	4	...	1	5
				89		42	131

The ages of residents who died in or outside the Borough were as follows :—

87 or 17·02 per cent. under 1 year.					
31	„	6·07	„	over 1 year and under 5 years.	
15	„	2·94	„	5 years	„ 15 „
32	„	6·26	„	15 „	„ 25 „
179	„	35·03	„	25 „	„ 65 „
167	„	32·68	„	65 years and upwards.	

The following table is included in order that comparison may be made between the rates under the several headings for Colchester and those for England and Wales as a whole, for the larger and for the smaller towns separately, and for England and Wales less these towns.

YEAR 1910.

				Annual Rate per 1,000 living.			Deaths under one year to 1,000 Births.	
				Births.	Deaths.			Principal Epidemic Diseases.
					Crude.	Corrected.*		
England and Wales	...	...	...	24·8	13·4	13·4	0·99	106
77 great towns	...	...	...	25·0	13·4	14·3	1·23	115
136 smaller towns	...	...	...	23·7	12·4	12·9	0·88	104
England & Wales less the 213 towns	...	...	...	25·0	13·6	12·8	0·74	96
Colchester	...	...	...	22·6	13·0	12·7	0·46	90

* The corrected Death Rates represent the crude Death Rates multiplied by the respective factors for correction for differences of sex and age constitution of population.

INFANTILE MORTALITY.

The total number of deaths of children under 1 year old was 87, two less than in 1909, but unfortunately the number of births being lower the rate of infantile mortality is higher, being 90·1 per 1,000 births, whereas in 1909 it was 89. The 7 deaths from whooping cough are to be much regretted, but as whooping cough was very prevalent throughout the district during the year it is satisfactory that a greater number of infants did not succumb to this complaint. A matter of much greater satisfaction is that only 6 infants died from diarrhœal diseases, whereas in 1909, a year climatically very similar to the year under consideration, 20 deaths in infants were certified as due to some form of diarrhœal disease.

Tables IV. and V. at the end of the Report give the causes of, and ages at death.

THE INFECTIOUS DISEASES.

Infectious Diseases Notified, 1901-1910.

	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910
Small Pox	1	3	24	1	0	0	0	0	0	4
Scarlet Fever	50	47	100	257	223	37	45	128	82	79
Diphtheria	287	162	54	56	60	29	18	41	29	32
Typhoid Fever	28	9	17	17	12	12	8	11	5	2
Erysipelas	48	25	46	38	38	51	24	22	22	30
Puerperal Fever	1	1	0	3	0	0	2	1	4	4
	416	247	242	372	333	129	97	203	142	151

Deaths from Infectious Diseases registered in the Borough, 1901-1910.

	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910
Small Pox ...	0	1	5	5	0	0	0	0	0	2
Scarlet Fever ...	0	1	1	6	3	1	0	1	1	2
Diphtheria ...	39	15	5	7	10	3	1	5	2	2
Typhoid Fever ...	4	2	2	4	2	2	0	2	0	1
Erysipelas ...	4	0	0	2	0	3	1	1	2	3
Puerperal Fever ...	1	0	0	2	0	0	4	0	2	2
Measles ...	29	2	6	12	0	9	1	9	6	1
Whooping Cough ...	14	10	7	17	5	19	10	7	3	12
Phthisis ...	52	62	45	48	49	36	45	47	39	49

MONTHLY NOTIFICATIONS, 1910.

Month.	Small Pox.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Erysipelas.	Puerperal Fever.	Phthisis.	Total.
January	4	7	3	...	3	..	7	24
February	5	1	...	1	...	4	9
March	4	5	...	2	...	3	14
April	3	4	...	...	...	8	15
May	9	2	...	...	1	6	18
June	13	3	...	1	1	11	29
July	9	3	...	1	1	2	16
August	3	3	...	2	...	5	13
September	1	1	2	5	...	5	14
October	13	1	...	4	...	2	20
November	9	4	...	6	...	2	21
December	5	2	...	5	1	3	16
Year 1910	4	79	32	2	30	4	58	209

SMALL POX.

Upon January 12th, 1910, two cases of small pox were brought to my notice. The disease was well developed, as both patients had been ill for five days. They were at once removed to the Small Pox Hospital and every effort was made to prevent the spread of the disease. As canvassing was being carried on at the time in connection with the general election, great anxiety was felt that an outbreak of the disease might ensue. Fortunately only one person contracted the disease from these cases, and she was the woman who had looked after them from the beginning of their illness. The seriousness of the disease was greatly increased in her case, as she was daily expecting the birth of a child, and this actually occurred upon the same day that she first showed any signs of small-pox. The child, though the mother had been re-vaccinated and the child itself vaccinated immediately after birth, when seven days old showed a small pox eruption, and both mother and child died within a fortnight of contracting the disease.

The two original cases were both very severe and of the confluent variety, but both did well and ultimately completely recovered.

No further cases occurred.

SCARLET FEVER.

During 1910, 79 notifications of scarlet fever were received. In the early part of the year the outbreak at Mile End ceased completely after having lasted over two years, the cases never occurring in great numbers at the same time but being continuous, hardly a single month in 1908 and 1909

passing without three or four notifications being received. It is probable that the infection was kept up by very mild cases which were too slight to appear to need serious attention.

Had it not been for an outbreak in the Royal Eastern Counties Institution, which continued from June to the end of the year, and was responsible for 21 cases, and an outbreak at the Workhouse during June, July, and August, which caused 13 cases, the number of cases for the year would have been the lowest upon record.

All the cases at the Workhouse were at once removed to the Isolation Hospital and 10 of the Royal Eastern Counties Institution cases. One attendant at the Institution caught the disease and ultimately died of it; a sister of this patient had some years previously died from scarlet fever and it would appear that there was a family susceptibility to the disease. One patient at the Institution also died from this disease. These two were the only deaths from scarlet fever.

There were two cases of scarlet fever among the Military population.

DIPHTHERIA.

There were 32 cases of diphtheria notified in 1910. This is three more than in the previous year. Two cases notified as diphtheria proved not to be so, and these notifications were withdrawn and are not included in the total number. Five cases occurred among the Military population and were removed to the Infectious Hospital.

Two deaths from diphtheria occurred during the year. In one case the notification was not received until after death, which appears to have been very sudden, and due to laryngeal symptoms suddenly supervening; antitoxin had not been given. In the other case the child had been ill at least eight days before the notification was received, and was in a very serious condition when antitoxin was administered; it was removed to the Hospital for the sake of the other children in the house.

During the year 113 diphtheria contacts were examined. Six of these showed the presence of diphtheria bacilli in the throat, and were isolated and treated until free from the organism.

TYPHOID FEVER.

Only two cases of typhoid fever were notified during 1910. A third notification was received but the case proved not to be one of typhoid and the notification was withdrawn.

No case of typhoid fever was notified from the Military population.

One case was sent into the Hospital from outside the Borough. As the patient had been ill for several days, and was in a serious condition when he arrived it was considered impossible to do otherwise than admit him to the Hospital at once. Unfortunately this patient died. It is to be regretted that it was considered advisable to carry a person suffering from typhoid fever nearly eight miles in an ordinary carriage.

MEASLES, WHOOPING COUGH AND CHICKEN-POX.

A very excellent idea of the prevalence of any disease in the town is obtained by means of the notification of suspected cases of infectious disease amongst school children. Head-teachers have been of the greatest assistance in this work, and have repeatedly been correct in their suspicions that a child was sickening for, or ill from, an infectious complaint. Both cases of diphtheria and scarlet fever have been discovered in this way, and it is certain that this method of notification has prevented infectious disease from spreading in the schools. Only two cases of measles have been reported during the year, one of which died. A few cases thought at first to be measles proved to be some other disease.

Whooping cough on the other hand has been very prevalent, 216 cases at least having occurred, and probably many more that were not notified to the Health Department.

There have been 75 cases of chicken-pox, and this number also is undoubtedly below the total number that have occurred. Four cases of mumps have been brought to the notice of the Health Department.

Special leaflets are sent to the parents of children suffering from whooping cough, measles or mumps, warning them of the danger of infection, and recommending them to seek medical advice.

TUBERCULAR DISEASE.

The total number of deaths from tubercular diseases during 1910 was 63, being four more than in 1909. Of these 49 died from pulmonary tuberculosis, and 14 from some other form of tubercular disease. Four deaths from consumption were those of non-residents. The following table gives the number of deaths and other particulars dealing with tubercular disease for the past 16 years.

Year.	Total Deaths from Phthisis.	Deaths from Phthisis amongst Residents and excluding Asylum cases.	Deaths from other varieties of Tuberculosis (excluding the Asylum deaths).	Phthisis Death-rate (excluding Asylum deaths).
1895	70	56	...	1'56
1896	58	52	..	1'43
1897	51	42	...	1'31
1898	63	55	...	1'49
1899	56	46	...	1'23
1900	59	52	...	1'38
1901	52	49	...	1'28
1902	62	50	21	1'29
1903	45	36	11	0'91
1904	48	41	17	1'03
1905	49	44	12	1'09
1906	36	32	20	0'79
1907	46	44	12	1'07
1908	47	45	11	1'08
1909	38	38	21	0'90
Average for 10 years—1900-1909	48	43	...	1'08
1910	49	45	14	1'06

It is to be regretted that though in 1909 10 fewer deaths from phthisis occurred than in 1908, yet in 1910 there have been 11 more than in 1909.

The total number of cases of phthisis notified in 1910 was 58, that is 25 more than in 1909, a very serious increase. Under the system of voluntary notification 47 cases were reported, and 11 under the Local Government Board Tuberculosis Regulations.

All cases notified were from the Civilian population, no cases being reported from the Garrison.

Of the 58 cases notified during 1910 28 died before the end of the year.

3 died within 2 weeks of notification.

3 " 3 " "

2 " 4 " "

3 " 5 " "

1 " 6 " "

2 " 7 " "

1 " 2 months "

4 " 3 " "

8 " 6 " "

1 " 8 " "

2 died from other diseases.

Of the 45 deaths from phthisis among residents, 1 was notified in 1907 ; 5 in 1909 ; 26 in 1910 ; and 13 had not been notified.

All persons notified are visited and kept under observation and advice is given them how to avoid spreading the infection, spitting flasks and disinfectant being supplied from the Public Health Offices.

INFECTIOUS DISEASES HOSPITAL.

During 1910, 14 more patients were treated in the Myland Hospital than in the previous year, 102 persons suffering from an infectious disease being admitted as is shown in the following table.

Month.	Small Pox.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Total.
January...	4	7	3	...	14
February...	...	3	1	...	4
March...	...	4	3	...	7
April...	...	3	4	...	7
May...	...	9	1	...	10
June...	...	13	3	...	16
July...	...	9	2	...	11
August...	...	3	3	1	7
September...	...	1	1	2	4
October...	...	8	1	...	9
November...	...	6	4	...	10
December...	...	1	2	...	3
Year 1910...	4	67	28	3	102

In addition one small pox contact and eight diphtheria contacts were removed to the Hospital for isolation owing to the impossibility of proper isolation being provided for them in their own homes.

One doubtful case of scarlet fever removed to the hospital proved to be a case of mumps, and one case, thought at first to be typhoid fever, ultimately proved to be a case of mucous colitis.

There were during the year 8 cases of mixed infection ; one scarlet fever and mumps ; one scarlet fever and diphtheria ; and six scarlet fever and whooping cough.

The average stay of cases in the hospital was :—scarlet fever 48 days ; diphtheria 37 days ; diphtheria contact 24 days.

The percentage of cases removed to the Fever Hospital was :—Scarlet fever 84 per cent. ; diphtheria 87 per cent. ; typhoid fever and small pox 100 per cent.

There were five deaths in the hospital during the year. These have already been commented upon ; they were :—two from small pox ; one from diphtheria ; one from enteric fever ; and one from scarlet fever.

In June, 1910 the new wards at the Hospital were opened, and have since been of very great use.

Among other improvements, one of the wooden buildings has been converted into a discharge block for scarlet fever patients. Here, before a child convalescent from scarlet fever is discharged, he is given a disinfecting bath and put to bed in a non-infectious ward ; thus, the risk of his carrying infection is greatly reduced.

The new buildings consist of two blocks, the "Laver" block for scarlet fever, and the "Shaw" block for isolating suspicious cases or cases of double infection. The former is made up of two large wards and two small side wards with ward kitchen, bath room and lavatories. The latter consists of four wards with a central kitchen. The wards are in pairs and separated by glass partitions from one another. A verandah outside the wards connects them with one another, the kitchen and offices.

During the year it has been found possible to have the corrugated iron building completely renovated and several minor improvements have been made in the arrangements of the wards and kitchen in it. Also the work of the staff has been facilitated and the wards greatly improved by the installation of electric light.

INQUESTS.

The Borough Coroner, Mr. H. Geoffrey Elwes, has again kindly supplied the following figures relative to inquests held in the Borough :—

Cause of Death.	Males.	Females.	Totals.
Manslaughter	1	0	1
Suicide while Insane	8	1	9
Accident or Misadventure	11	4	15
Natural Causes	3	3	6
Drowning (Open Verdict)	1	0	1
Injuries (Open Verdict)	1	0	1
	25	8	33

In 10 of the above cases the deceased was not a resident in the Borough.

In all 59 cases were reported to the Coroner, but after preliminary enquiries no inquest was deemed necessary in 26 of these.

PUBLIC HEALTH LABORATORY.

Though there were only three more cases of diphtheria than in 1909 yet the number of swabs examined for the Klebs-Löffler bacillus increased to 562 during the year. Of these 210 were sent by medical practitioners, and 352 were taken by me or under my direction. Diphtheria bacilli were found in 76 of the former and 74 of the latter.

Widal's test for the diagnosis of typhoid fever was applied to 17 specimens of blood ; two of these gave a positive reaction and 15 were negative.

More than twice the number of specimens of sputum were found to contain tubercle bacilli. In 1909, tubercle bacilli were found in 15 out of 47 specimens ; in 1910, 90 specimens were examined and in 33 the organism of consumption was found. All 33 specimens were from different cases.

WATER SUPPLY.

Samples of the Borough Water Supply have been regularly examined every month ; also the water of eight wells in the Borough was analysed bacteriologically.

The Borough water supply proved satisfactory upon every occasion. That of the wells was not, organisms showing the presence of contamination being present in every sample ; in each instance notices were served upon the owners and the wells were closed for drinking water, the town supply being laid on to the houses.

FOOD INSPECTION.

During the spring and summer of 1910 every cow-shed in the Borough was personally inspected, and the need for cleanliness in milking impressed upon the cow-men. In some sheds great care is taken, the udders being cleaned and the cow-men being obliged to wear overalls, and to wash their hands before beginning to milk. In others, the men appeared to look upon such proceedings as quite unnecessary. It would be interesting to compare the microbic contents of specimens of milk from these two types of milkers. In 1907 such an investigation was carried out in the East and West Ridings of Yorkshire, and among the conclusions arrived at was, that, "of the total organisms in the milk used by the consumer, the greater number are contributed by the farmer,"—this statement is quoted directly from the report issued by the Committee.

All dairies and milkshops are constantly visited by the Inspector, and any contravention of the Bye-laws at once reported.

There are 24 herds of cows in the district, which supply milk to the dairies and milkmen. These herds vary in size very considerably as the following list shows.

						Total number of Cows.	
Number of herds	of from 3 to	5 cows	...	...	5	...	17
"	"	6 " 10 "	...	...	2	...	15
"	"	11 " 20 "	...	...	9	...	131
"	"	21 " 30 "	...	...	5	...	114
"	"	31 " 60 "	...	...	3	..	126
						—	—
Total						24	403
						—	—

In 16 instances the water for the sheds is derived from wells, in seven from the town-supply and in one from both a well and the town-supply.

The Inspector is often present during the slaughtering at the various slaughter-houses in the Borough. He also visits them at other times to see that they are kept in accordance with the Bye-laws. During the year the Health Committee considered the advisability of enabling the Inspector to obtain a certificate in meat inspection. It is probable that during 1911 facilities will be given him for obtaining this.

During 1910 no meat was seized as being in an unsound condition, nor was any meat surrendered and destroyed with the consent of the owners.

Towards the end of the year the death of a heifer from Anthrax occurred in a field on the Borough boundary. Great precaution was taken in connection with it, the carcase being deeply buried. No further cases occurred.

SANITATION OF THE SCHOOLS.

All the public elementary schools in the Borough have been visited and inspected. A report recommending certain small alterations was submitted to the Education Committee. At only one school, St. John's, Ipswich Road, was there need to find serious fault. At this school, though a new class-room has been built and a system of drainage instituted for rain water, the only water-supply continues to be what can be carried from a well some 80 yards distant, and the closet accommodation consists of pails which quickly become offensive.

Further details dealing with the schools are contained in the separate Report upon the Medical Inspection of the school children during the year.

SALE OF FOOD AND DRUGS ACT.

From April to September Mr. Charles Hackman was appointed Public Analyst to the Borough. In October I was appointed to this post.

The following table shows the results of the analysis of samples from April to the end of the year.

Samples.	Number of Samples.	Adulterated.	Nature of Adulteration.
Milk	34	5	Three, fat abstraction; 5, 3 and 10 per cent. respectively.
Butter	9		Two, added water; 14, 10 per cent. respectively.
White Pepper	2		
Tea	1		
Coffee	1		
Lard	3	1	100 per cent. cocoanut oil.
Malt Vinegar	2		
Chocolate	1		
Linseed Meal	1		
Ground Nutmegs	1		
Olive Oil	1		
Chicory	1		
Ground Ginger	1		
Drugs	4		
Ground Rice	1		
Custard Powder	1		
	64	6	

The Drugs consisted of Black Draught, Glycerine, Oil of Eucalyptus and Compound Liquorice Powder.

In two of the cases of fat abstraction the vendors were warned. In the third case of this nature a prosecution was instituted, and the defendant was fined £1 and 12s. costs.

In both cases of added water proceedings were instituted, and in one case defendant was fined £1 including costs, and in the other £1 with 12s. costs.

In one instance cocoanut oil was sold as lard; proceedings were instituted and the defendants fined £2 and 16s. costs.

HOUSE INSPECTION.

During 1910 the new Housing (Inspection of District) Regulations came into force. They were carefully considered by the Health Committee, and it was decided that the Sanitary Inspector should prepare, under the direction and supervision of the Medical Officer of Health, lists of dwelling-houses needing early inspection.

After an inspection has been made complete records of the state of the house inspected have to be kept at the Public Health Offices, and these will, from time to time, be considered by the Health Committee.

Three houses during 1910 were found to be unfit for human habitation, and representations were made to the local authority with the result that one was closed and the other two demolished.

The Assistant Inspector has, as in previous years, continued the house-to-house inspection. The following table shows the results of his work :—

Name of Street.	Number of Houses Inspected.	Premises in a Dirty Condition.	Defective Drains.	Choked Drains.	Defective Water Closets.	Defective Traps.	Number of Water Closets.	Number of Outside W.C.'s not supplied with Water.	Premises without Spouting or Spouting defective.	Premises damp or Dilapidated.	Premises without a proper Water Supply.	Sink Waste Pipes direct to Drains.	Animals improperly kept.	Other Nuisances.	Separate Larders.
Butt Road	171	2	...	1	9	2	173	51	2	1	...	1	...	25	48
Balkerne Lane	43	2	...	...	3	...	37	28	1	2	...	...	...	12	3
St. Mary's Road	28	...	...	...	1	...	28	28	...	1	...	...	...	1	3
Alexandra Road	44	1	...	...	1	1	47	15	...	...	...	1	...	10	16
Alexandra Terrace...	20	2	1	1	...	...	20	...	2	1	...	...	8	6	...
Popes Lane... ..	14	...	...	...	1	...	14	14	...	...	...	...	...	1	...
Balkerne Hill	36	...	...	...	1	...	34	26	...	2	...	...	...	5	4
James Street	17	...	...	...	2	...	17	9	...	...	...	...	...	5	3
Winsley Road	37	...	...	...	...	...	37	4	...	...	...	...	...	9	21
Charles Street	35	...	1	1	4	...	35	30	1	2	...	...	...	3	1
Granville Road	51	1	1	2	2	2	51	2	...	...	...	...	...	16	4
Clay Lane, Mile End ...	27	1	2	...	...	...	1	1	8	11	1	...	4	58	5
Winchester Road	91	...	3	3	1	3	91	31	2	4	...	...	...	40	6
Albion Grove	30	...	1	...	...	...	30	15	...	...	...	...	...	11	1
Canterbury Road (in part)	98	...	1	5	...	...	98	...	...	6	...	...	...	32	22
Totals	742	9	10	13	25	8	713	254	16	30	1	2	12	234	137

Notices ordering the abatement of defects are sent in all cases and usually complied with without further steps having to be taken.

Again nearly one hundred more inspections have been made than in the previous year.

As was pointed out last year the number of water closets without a proper water supply is far too great.

FACTORIES, WORKSHOPS, WORKPLACES AND HOMEWORK.

No prosecutions were found necessary in connection with this work during the year. Those defects not remedied at the end of the year are still in hand. The usual tables are included below—

1.—INSPECTION.

Including Inspections made by Sanitary Inspectors.

Premises.	Number of	
	Inspections.	Written Notices.
Factories including Factory Laundries	86	9
Workshops, including Workshop Laundries	326	51
Workplaces	32	10
Total	444	70

2.— DEFECTS FOUND.

Particulars.	Number of Defects	
	Found.	Remedied.
<i>Nuisances under the Public Health Acts :—</i>		
Want of cleanliness	27	25
Want of ventilation	3	2
Overcrowding	2	2
Other nuisances	38	37
Sanitary accommodation—unsuitable or defective ...	5	4
<i>Offences under the Factory and Workshop Act :—</i>		
Breach of special sanitary requirements for bakehouses (ss. 97 to 100)	10	9
Other offences	1	1
Total	85	80

3.—HOME WORK.

Nature of Work.	Outworkers' Lists, Section 107.								Notices served on Occupiers as to keeping or sending lists.	Inspections of Outworkers' premises	Outwork in Infected Premises, Secs. 109, 110				
	Lists received from Employers twice a year			Lists received from Employers once a year			Addresses of Outworkers received from other Councils	Addresses of Outworkers forwarded to other Councils							
	Lists	Outworkers		Lists	Outworkers									Instances	Orders made
		Con-tractors	Work-men		Con-tractors	Work-men									
Wearing Apparel	82	0	2037	6	1	38	28	1507	3	779	1	1			
Sacks ...	4	0	10	0	0	0	0	0	0	10	0	0			
Furniture and Upholstery	8	0	14	1	0	2	0	0	0	6	0	0			
Basket making	2	0	2	0	0	0	0	0	0	2	0	0			
Total ...	96	0	2063	7	1	40	28	1507	3	797	1	1			

4.—REGISTERED WORKSHOPS.

Class.	Number.
Workshops on the Register (s. 131) at the end of the year :—	
Bakehouses	48
Domestic Workshops	23
Laundries	11
Dressmakers' and Milliners' Workshops	72
Other Workshops	397
Total Number of Workshops on Register	551

Class.	Number.
Matters notified to H.M. Inspector of Factories :—	
Failure to affix Abstract of the Factory and Workshop Act (s. 133) ...	10
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (s. 5) {	2
Notified by H.M. Inspector	
Reports (of action taken) sent to H.M. Inspector ...	2
Underground Bakehouses (s. 101) :—	
Certificates granted during the year ...	0
In use at the end of the year ...	1

RAINFALL RETURNS.

Though less rain fell than in 1909 the total depth in inches is still high owing to the summer months being wetter than usual. This undoubtedly reacted favourably upon the number of infantile deaths from summer diarrhœa. But it is to be hoped that in time it will be possible for Colchester to enjoy a low infantile mortality and a dry summer at one and the same time.

Month.	Total Depth (inches)		Greatest fall in 24 hrs. (at Osborne St. Depot).		Number of days on which 0·01 in. or more fell (at Osborne St. Depot).	Rainfall for 1909 (at Osborne St. Depot).
	Lexden.	Osborne St. Depot	Depth.	Date.		
January	1'30	1'18	0'23	24th	18	0'64
February	2'20	2'03	0'36	20th	20	1'26
March	0'88	0'93	0'44	9th	9	2'05
April	1'45	1'41	0'31	4th	15	1'41
May	2'49	2'84	0'46	28th	16	0'70
June	1'40	1'56	0'42	10th	15	3'96
July	1'55	1'57	0'45	5th	13	3'69
August	2'45	2'33	0'57	25th	14	2'88
September... ..	0'90	0'82	0'74	13th	6	1'59
October	1'39	1'24	0'35	31st	9	3'89
November	2'87	2'87	0'84	27th	18	0'82
December	3'05	3'06	0'74	2nd	19	3'63
Total	21'93	21'84			172	26.52

The Sanitary Inspector reports as follows :—

I have the honour of submitting my Fifteenth Annual Report.

COMPLAINTS AS TO NUISANCES. During the year the number of complaints reported to me was 451.

The premises referred to in such complaints are promptly visited, and notices served upon the person by whose act, default or sufferance the nuisance arises or continues. When making such inquiries, it often happens that nuisances created by the occupier, such as foul accumulations, and animals improperly kept, are detected; in these cases the notice served upon the occupiers to abate nuisances for which they are directly responsible, has had the desired effect, and caused a speedy abatement of the nuisance. It is satisfactory to report again that no legal proceedings were necessary to enforce the abatement of a nuisance.

DRAINAGE WORK AND SUPERVISION. As mentioned in past reports many visits are sometimes made in order to see that the notice served is properly carried out, and when the work of re-construction of the drainage of premises is necessary, daily visits are usually made as the work proceeds, the drains being finally tested before they are covered up.

INFECTIOUS DISEASES, DISINFECTION, ETC. When the case notified is one of an infectious disease, the house is promptly visited by the Medical Officer of Health or myself, and if thought necessary, the case is removed under the instructions of the Medical Officer to the Infectious Diseases Hospital. Thorough disinfection of the premises and all articles of clothing which have been exposed to infection is carried out, and the bedding in addition where the case is one of Scarlet Fever, Enteric Fever or Phthisis is disinfected in the steam disinfectant—1987 such articles were disinfected during the year; 687 library and other books have been specially disinfected after cases of infectious disease.

HOUSE-TO-HOUSE INSPECTION. This work has been proceeding for several years past, and most of the older parts of the Borough have been inspected. By this means many defects are discovered, and remedied. Among other nuisances detected by this method of inspection is the want of proper ashpit accommodation. For many years past I have been trying to get foul ashpits abolished, and in lieu thereof to establish a uniform system of sanitary dustbins, but this work has proceeded slowly, and I anticipate reporting more houses that are without proper ashpits in order that Statutory notices may be served upon the owner to provide such accommodation, and with the now weekly collection and removal of house refuse this will lessen and diminish considerably the breeding ground of the house fly. A covered galvanised iron dustbin is an ashpit within the meaning of the Public Health Acts, and each house in the Borough should be provided with a proper sanitary dustbin. During the year, 103 such bins were provided for the reception of house refuse. Tabulated particulars of the various nuisances and defects discovered are enumerated in the report of the Medical Officer of Health, and the total number of houses inspected in the Borough in connection with infectious diseases, complaints, special inspections, and the Factory and Workshop Acts was 3,154. I have made a personal inspection of many of the Court during the year, and many houses have been placed upon the list which are to be inspected under the Housing (Inspection of District) Regulations, 1910.

During the year, under the direction of the Medical Officer of Health, a special enquiry has been made into the sanitary condition of houses and premises, in which deaths of children under two years of age occurred, 91 houses being inspected.

Statement A gives in detail the various works which have been carried out as a result of the above inspections.

THE REGISTERED COMMON LODGING HOUSES have been frequently visited. They are kept clean, and their general management is satisfactory. The premises situated on East Hill have been inspected by the Medical Officer of Health and myself, and reported upon to the Health Committee and it is anticipated that the necessary works will be carried out shortly, so as to enable the premises to be registered as a Common Lodging House.

TENTS, VANS, SHEDS AND SIMILAR STRUCTURES. I have inspected many vans which came into the Borough, in order to see if any overcrowding or cases of an infectious nature existed among the inmates, and none was found to exist.

Fried fish shops, ice cream premises, and other shops where meat and other food is exposed for sale, have been visited and inspected. I cautioned the managers of two shops where foreign meat is sold as to the manner in which the meat was kept prior to its being sold. In one instance I saw two or three sides of meat lying on the floor, which was in a dirty condition, and in another shop a quantity of meat lying on a side shelf awaiting removal to the fat boiler. Upon subsequent visits shortly afterwards matters had considerably improved.

STATEMENT A.						Public Health Act.	Factory and Workshop Act.
Complaints Received	...	...	...	...	...	449	2
Visits made to Slaughterhouses	...	...	...	...	...	485	0
Visits made to Bakehouses	...	...	...	...	...	6	120
Visits made to Dairies and Milkshops	...	...	...	...	...	192	0
Visits made to Cowsheds	...	...	...	...	...	108	0
Workshops Inspected	...	...	...	...	...	108	326

						Public Health Act.	Factory and Workshop Act.
Workshops Cleaned	...	...	...	...	...	9	27
Houses Cleaned	...	...	...	...	...	60	9
Houses Disinfected	...	...	...	...	...	161	0
Overcrowding Abated	...	...	...	...	...	6	5
Houses placed in Habitable Repair	...	...	...	...	...	1	0
Defective Roofs Repaired	...	...	...	...	...	34	12
Rain-water Pipes and Gutters Renewed or Repaired	...	...	...	...	...	41	11
Cesspools Abolished	...	...	...	...	...	16	0
Houses connected with Sewers	...	...	...	...	...	18	0
Privies Abolished	...	...	...	...	...	23	0
Privies converted into Waterclosets	...	...	...	...	...	23	0
Privies and Waterclosets Repaired	...	...	...	...	...	65	6
New Closets Built	...	...	...	...	...	7	1
Water Supply for Closets Provided	...	...	...	...	...	15	3
Defective Water Fittings for W.C.'s Repaired	...	...	...	...	...	34	28
Filthy Closets Cleansed and Limewashed	...	...	...	...	...	6	9
Closets Unstopped	...	...	...	...	...	70	8
New Closet Pans or Apparatus Fixed	...	...	...	...	...	56	1
New Seats and Risers Fixed in Waterclosets	...	...	...	...	...	26	1
New Floors Laid or Repaired in Waterclosets	...	...	...	...	...	25	3
Drains Unstopped	...	...	...	...	...	64	7
Drains Repaired	...	...	...	...	...	14	1
Old Drains Abolished	...	...	...	...	...	13	0
New Drains Laid	...	...	...	...	...	25	1
Disconnection Syphons Fixed	...	...	...	...	...	20	0
Disconnection Chambers Built	...	...	...	...	...	20	0
Fresh Air Inlet Pipes Fixed	...	...	...	...	...	20	0
Foul Air Exit Pipes Fixed	...	...	...	...	...	22	1
Bell and other Insanitary Traps Abolished	...	...	...	...	...	18	0
Trapped Yard Gullies Fixed	...	...	...	...	...	53	1
Defective and Insufficiently-Ventilated Soil Pipes	...	...	...	...	...	5	0
Sink Waste Pipes Trapped or Disconnected from Drains	...	...	...	...	...	3	0
Bath and Lavatory Waste Pipes Trapped and Disconnected with Drains	...	...	...	...	...	2	0
Ashpits Abolished	...	...	...	...	...	10	0
Ashbins Provided	...	...	...	...	...	98	5
Manure and Offensive Matters Removed	...	...	...	...	...	91	11
Defects Reported to Borough Surveyor	...	...	...	...	...	58	0
Animals Improperly Kept or Removed	...	...	...	...	...	69	12
Nuisances Detected or Reported	...	...	...	...	...	573	161
Nuisances Abated	...	...	...	...	...	531	152
Notices Served, Informal	...	...	...	...	...	571	161
„ „ Statutory	...	...	...	...	...	10	1
Other Blemishes Abated	...	...	...	...	...	103	12
Yards Paved	...	...	...	...	...	7	0
Samples of Water taken for Analysis	...	...	...	...	...	8	0
Wells Sunk, Cleansed or Repaired	...	...	...	...	...	2	0
Wells Closed	...	...	...	...	...	4	0
Water Supply Provided for Domestic Purposes	...	...	...	...	...	5	0
Leaky Taps Repaired where drawing from Public Mains	...	...	...	...	...	34	21
Ventilation Provided	...	...	...	...	...	17	3
Failure to affix Abstract of Act	...	...	...	...	...	0	10
Insufficient or Defective W.C. Accommodation	...	...	...	...	...	0	5

DRAIN TESTING STATEMENT B.

The following table shows the locality of sewer gas escapes.

Into Kitchens and Sculleries	...	...	...	...	...	...	2
„ Cellars	...	...	...	...	...	...	5
„ External Water Closets	...	...	...	...	...	...	9
„ Internal Water Closets	...	...	...	...	...	...	14
„ Dining Rooms and other parts of House	...	...	...	...	...	...	4
From Heads and Joints of Rain Water Pipes	...	...	...	...	...	...	14
„ Joints of Soil Pipes and Vent Pipes	...	...	...	...	...	...	19
„ Defective Internal Soil Pipes	...	...	...	...	...	...	2
„ Defective Drains	...	...	...	...	...	...	15
„ Defective Set Traps in Yard	...	...	...	...	...	...	2
„ Rat Holes in Yard	...	...	...	...	...	...	2

FACTORY AND WORKSHOP ACTS. A large amount of work has been carried out by Mr. Humphrey, Assistant Inspector, under the above Acts. The number of workshops now on the register is 551, made up of the following : 48 bakehouses, 23 domestic workshops, 11 laundries, 72 dressmakers and milliners, and 397 other workshops. 444 visits have been made to the above premises. The number of homemaker's premises visited is 797 ; this includes 617 tailoresses, 136 shirtmakers, 15 bootmakers, 12 board tailors, 10 sack repairers, 5 upholsterers, 2 basket makers. The number of lists received under the Act is 96. The Clerks of the various Urban and Rural Councils have been notified of all homeworkers residing outside the Borough. The number of homeworkers residing inside the Borough is 2,063, outside 1,507

I am,

Your obedient servant,

THOMAS WELLS.

Sanitary Inspector.

In conclusion I have pleasure in stating that the work of the Department has been carried out to my entire satisfaction.

I have the honour to be,

Your obedient servant,

WALTER F. CORFIELD,

Medical Officer of Health.

TABLE I.

Vital Statistics of Whole District during 1910 and previous Years.

Year.	Population estimated to middle of each year.	Births.		Total Deaths Registered in the District.				Total Deaths in Public Institutions in the District.	Deaths of Non-Residents registered in Public Institu- tions in the District.	Deaths of Residents registered in Public Institu- tions beyond the District.	Nett Deaths at all ages belonging to the District.			
		Number.	Rate.*	Under 1 Year of Age.		At all Ages.					Number.	Rate.*	Number.	Rate.*
				Number.	Rate per 1,000 Births registered.	Number.	Rate.*							
1	2	3	4	5	6	7	8	9	10	11	12	13		
1900 ...	37,991	1000	26.2	120	120	597	15.7	99	17	0	580	15.2		
1901 ...	38,383	936	24.3	132	141	643	16.7	136	12	1	632	16.4		
1902 ...	38,778	943	24.3	93	98	555	14.3	121	40	0	515	13.2		
1903 ...	39,300	1021	25.97	128	124	536	13.64	102	38	1	499	12.7		
1904 ...	39,700	1033	26.02	182	176	670	16.87	117	41	1	630	15.8		
1905 ...	40,120	1037	25.85	97	9.35	539	13.43	116	37	0	502	12.5		
1906 ...	40,540	969	23.9	125	129	537	12.2	114	32	3	508	12.5		
1907 ...	40,970	999	24.38	84	84	517	12.6	105	18	3	502	12.25		
1908 ...	41,450	976	23.55	88	90	515	12.4	122	32	0	483	11.65		
1909 ..	41,835	998	23.85	89	89	516	12.3	112	25	5	492	11.8		
Averages for years 1900-1909	39,906	991	24.8	113	114	562	14.0	114	29	1	534	13.4		
1910 ..	42,275	958	22.6	87	90	551	13.0	131	43	3	511	12.0		

* Rates in columns 4 and 8 should be calculated per 1,000 of the estimated gross population.

NOTE.—The deaths to be included in Column 7 of this Table are the whole of those registered during the year as having actually occurred within the district or division. The deaths to be included in column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term “Non-residents” is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term “Residence” is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

The “Public institutions” to be taken into account for the purposes of these Tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses and lunatic asylums.

Total population at all ages, 38,373.

Number of inhabited houses, 7,771.

Average number of persons per house, 4.5.

Area of District in acres (exclusive of area covered by water), 11,324.

At Census of
1901.

TABLE III.

Cases of Infectious Disease notified during the Year, 1910.

Notifiable Disease.	Cases Notified in Whole District.							Total Cases Notified in each Locality.				No. of Cases removed to Hospital from each Locality.				Total Cases removed to Hospital.
	At all Ages.	At Ages—Years.						North	South	East	West	North	South	East	West	
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards									
Small-Pox ...	4	1	...	...	...	3	...	...	...	4	...	...	...	4	...	4
Diphtheria (including Membranous Croup)	32	...	7	17	6	2	...	6	11	4	11	6	9	4	9	28
Erysipelas	30	...	2	2	4	17	5	10	5	7	8	...	...	...	...	...
Scarlet Fever	79	...	19	50	7	3	...	42	4	8	25	30	4	8	25	67
Enteric Fever	2	...	...	1	1	...	...	...	2	...	...	...	2	...	...	2
Puerperal Fever ...	4	...	...	...	...	4	...	...	1	1	2	...	...	...	...	...
Phthisis—																
Voluntary Notifications	47	...	...	5	13	28	1	14	11	16	6	...	...	...	...	...
Poor Law Notifications	11	...	...	1	3	7	...	1	4	2	4	...	...	...	...	...
Totals	209	1	28	76	34	64	6	73	38	42	56	36	15	16	34	101

Isolation Hospital—

Name and Situation—Myland Infectious Hospital, Colchester.

Total available beds, 75.

Number of Diseases that can be concurrently treated, 4.

TABLE IV.

Causes of, and Ages at, Death during Year 1910.

Causes of Death.	Deaths at the subjoined Ages of "Residents" whether occurring in or beyond the District.							Deaths at all ages of 'Residents' belonging to localities, whether occurring in or beyond the District.				Total Deaths whether of "Resi- dents," or "Non-Residents," in Public Institutions in the District.
	All Ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	North.	South.	East.	West.	
Small-pox	2	1	...	...	...	1	...	...	...	2	...	2
Measles	1	...	1	...	...	...	...	...	...	...	1	1
Scarlet Fever	1	...	...	...	1	...	...	1	...	...	...	2
Whooping-cough	12	7	5	...	...	...	...	1	3	6	2	...
Diphtheria (including Membranous Croup)	2	...	1	1	...	...	...	...	2	...	...	1
Enteric Fever ... ..	...	...	...	...	...	...	...	...	...	...	...	1
Epidemic Influenza	22	...	2	...	...	6	14	6	7	5	4	...
Diarrhœa	6	6	...	...	...	...	...	2	1	1	2	...
Enteritis	3	...	1	1	...	...	1	...	1	1	1	...
Puerperal Fever	2	...	...	...	...	2	...	...	...	...	2	...
Erysipelas	2	...	...	...	...	1	1	2	...	...	...	2
Phthisis (Pulmonary Tuberculosis)	45	...	...	4	13	26	2	6	17	13	9	13
Other Tuberculosis Diseases	14	4	3	4	1	1	1	4	4	5	1	5
Cancer (Malignant Disease) ...	33	...	...	...	...	19	14	6	12	9	6	11
Bronchitis	48	10	4	...	...	8	26	12	20	6	10	12
Pneumonia	24	2	6	...	...	11	5	4	6	4	10	3
Pleurisy	1	...	...	...	...	1	...	...	...	...	1	2
Other Diseases of Respiratory Organs	1	...	...	...	...	1	...	...	...	1	...	...
Alcoholism, Cirrhosis of Liver	4	...	...	...	...	3	1	1	1	1	1	...
Premature Birth	23	23	...	...	...	...	...	1	9	7	6	...
Diseases and Accidents of Parturition	2	...	...	...	2	...	...	...	1	1	...	...
Heart Diseases	55	...	1	2	2	34	16	15	23	8	9	9
Accidents	9	1	1	...	...	6	1	4	2	2	1	11
Suicides	9	...	...	...	3	4	2	2	3	2	2	1
Other Septic Diseases	5	...	...	1	3	1	...	...	3	1	1	3
All other Causes	185	33	6	2	7	54	83	34	60	48	43	52
All Causes	511	87	31	15	32	179	167	101	175	123	112	131

TABLE V.

INFANTILE MORTALITY DURING THE YEAR 1910.

Deaths from stated Causes in Weeks and Months under One Year of Age.

Cause of Death.				Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under 1 Year.
All causes :																				
Certified	...	...	...	27	5	7	1	40	6	7	5	5	7	3	2	2	4	2	2	85
Uncertified	...	...	...													1			1	2
Common Infectious Diseases :																				
Small-pox	...	...	...		1			1												1
Whooping Cough	...	...	...						2	1	1	1		1			1			7
Diarrhœal Diseases :																				
Diarrhœa, all forms	...	...	...							1										1
Enteritis, Muco-enteritis, Gastro-enteritis..	...	...	...			1		1		1			1	1						4
Gastritis, Gastro-intestinal Catarrh	...	...	...													1				1
Wasting Diseases :																				
Premature Birth	...	...	...	17	1	3		21	1	1										23
Congenital Defects	...	...	...	2		1		3				1				1		1		6
Atrophy, Debility, Marasmus	...	...	...	8	1	1		10		1	2		1			1	2	1		18
Tuberculous Diseases :																				
Tuberculous Meningitis...	...	...	...									1							1	2
Tuberculous Peritonitis: Tabes Mesenterica	...	...	...										1						1	2
Other causes :																				
Rickets	...	...	...															1		1
Meningitis (not Tuberculous)	...	...	...							1			1							2
Convulsions	...	...	...		2			2	1		1		1		1					6
Bronchitis	...	...	...			1		1	2	1		2	2	1					1	10
Pneumonia	...	...	...								1					1				2
Suffocation, overlying	...	...	...				1	1												1
				27	5	7	1	40	6	7	5	5	7	3	2	3	4	2	3	87

Population (estimated to middle of 1910)	...	...	...	...	42,275
Births in the Year	...	Legitimate	...	922	
		Illegitimate	...	36	
Deaths in the Year of	{	Legitimate infants...	...	83	
		Illegitimate ,,	...	4	
Death from all causes at all ages	...	...	...	...	55 ¹

**BOROUGH SURVEYOR'S
REPORT**

AND

**WATERWORKS
SUPERINTENDENT'S
REPORT**

FOR THE YEAR 1910.

BOROUGH ENGINEER'S AND SURVEYOR'S OFFICE,

TOWN HALL, COLCHESTER,

1st February, 1911.

DEAR MR. MEDICAL OFFICER,

I have pleasure in submitting my annual report upon the work done in this Department during the year 1910 :—

DRAINAGE WORKS. Glazed stoneware sewer pipes have been laid as follows :

St. John's Green	...	...	...	51 lineal feet of 12 inches
" "	...	...	...	90 " 9 "
Diaper's Garden, Priory Street (re-laid)	...	229	" 9 "	
Total	...	370 lineal feet		

Glazed stoneware surface-water pipes :—

Port Lane	...	...	...	153 lineal feet of 12 inches
Bergholt Road	...	...	...	571 " 9 "
Recreation Road	...	...	...	179 " 9 "
Mersea Road	...	...	...	124 " 9 "
Total	...	1027 lineal feet		

The total length of sewers in the Borough is now 60 miles, 450 yards.

BUILDINGS AND DRAINS. 121 plans have been submitted to the Council, representing 111 dwelling-houses, 2 public buildings, 7 workshops, 42 additions to buildings, and 33 other buildings.

110 dwelling-houses, and 84 other buildings have been erected.

About 150 houses, old and new, have been provided with new drains and sanitary fittings.

Buildings and drains have necessitated 1021 inspections, and all new drains have been subjected to a water test before being passed for use.

ROADS AND FOOTPATHS :

4,198½ square yards of Cement Concrete Paving,
 1,633 " " Tar Paving,
 407½ " " Granite, Yorkstone, Ragstone and Concrete Block Crossings,
 515 lineal yards of York Kerbing,
 1,827 " " Granite Kerbing, and
 2,844 " " Granite, Yorkstone, Ragstone and Concrete Block Channelling
 have been laid down in various parts of the Borough.

All main and other roads have been kept in a satisfactory state of repair with Mountsorrel and Stoney Stanton Granite, Kentish Ragstone, Kentish Sifted Red Flints, and local stone, rolled in by steam rollers.

REMOVAL OF REFUSE, ETC. The Council have caused to be removed :

9,308 loads of house refuse,
 1,137 " " trade " ,
 1,324 " " garden " ,
 1,368 " " sewage from deadwells,
 1,336 " " slop from street gullies,
 8,438 " " road scrapings, and
 20,380 truck-loads of horse-droppings, and other refuse from streets and roads.

All refuse has been removed from the Camp and Barracks, and other Government properties, by the Contractor, Mr. Collier.

STREET AND ROAD WATERING. 11,882,510 gallons of water have been used for street and road watering, and for road-making.

SEWERAGE OUTFALL WORKS. 445,445,240 gallons of sewage have been pumped into the tanks at the Sewerage Outfall Works, equal to an average daily flow of 1,220,398 gallons. After precipitation a residue has been left of 21,173 tons of liquid sewage, which has been treated with lime, and reduced by pressing to 4,234 tons, approximately, of portable manure, or sludge, all of which has been disposed of to farmers and others in the Borough and district.

I am, Sir,

Your obedient servant,

H. GOODYEAR,

Borough Engineer and Surveyor.

BOROUGH OF COLCHESTER,

WATER SUPPLY DEPARTMENT,

14th January, 1911.

DEAR SIR,

As requested I have pleasure in furnishing particulars relating to the work done by my Department during the past year.

MAINS. These have been extended a distance of 900 yards, making their present total length 50 miles 756 yards. In addition 2,878 yards of mains have been cut out, and replaced by larger ones. This work is again referred to in a later paragraph of my report.

HOUSES SUPPLIED. There are 9,145 houses (inhabited and uninhabited) connected with the Council's mains, exclusive of trade and business premises, factories, stables, and the Stanway Rural District supply. There are 134 houses in connection with the latter, which brings the total number to 9,279, *exclusive of the Garrison.*

NUMBER OF PERSONS SUPPLIED. Taking an average of $4\frac{1}{2}$ people per house (Government Census Return), and allowing for empty houses, an estimated civilian population of 39,352 receives a supply from the Council's Waterworks, and these figures do not include the Stanway Rural District or trade and business, &c., supplies.

Estimating the Stanway District at $4\frac{1}{2}$ people per house, the number of persons there supplied numbered 603. The military population averaged 4,344 (horses 880) not included in this calculation, making a grand total of 44,299 using the water of the Council.

METERS. There are 220 meters in use in connection with trade and business supplies, garden watering, &c.

DEFECTIVE FITTINGS. During the past year our Inspectors, in visiting properties for the purpose of waste detection, discovered leakages from defective pipes, fittings, &c., at 3,866 houses. In 503 cases notices were transmitted to the owners, who caused the necessary work to be carried out, and at 3,363 properties the repairs were executed gratuitously by our staff.

QUANTITY OF WATER PUMPED. The quantity of water pumped into the Water Tank, Balkerne Hill, was 306,727,500 gallons. In addition the surface spring water supplied by separate mains and reservoirs to the Great Eastern Railway Company's North Station amounted to 44,830,000 gallons, making the total quantity of water pumped 351,557,500 gallons.

THE AVERAGE CONSUMPTION PER HEAD PER DAY for all purposes, including road watering and making, fire extinguishment, sewers flushing, trade and business purposes (but excluding the G.E.R. Company's spring water supply) was 18.4 gallons.

MAIN EXTENSIONS. Mains in the Lexden district have been replaced, enlarged and connected up to the extent of 2,600 yards, to augment the supply there. This has proved a great boon to the water consumers, as well as being a great saving to the Department in preventing waste of water when repairs or renewals to services or mains are required. By this main work the water is now flowing along the Maldon, Lexden, and Straight roads, so that if either main is shut down no inconvenience is experienced. The water being also in constant circulation is a great advantage, as against having so many dead ends.

The old 2in. mains in Roman and Castle Roads have been cut out and replaced, from East Hill, with 4in., and about 500 yards of old 3in. main in Bergholt Road has been replaced by 4in., making the whole of the main in this road uniform in size.

Of course all the fire hydrants have been connected up to the new mains, and additional ones fixed where considered necessary, which must prove a great advantage in case of fire in these districts, and during the time water is required for watering roads.

LEXDEN WATER. The Lexden gravel bed springs have been analysed bacteriologically monthly by the Medical Officer of Health, whose reports have been highly satisfactory.

SERVICE RESERVOIR. The question of a covered service reservoir has again been under the consideration of the Water Supply Committee and the Council, and a site has been approved for the same on the Corporation's Several's Estate at Mile End, subject to the Local Government Board acquiescing in the scheme. I take it in the course of a few years this reservoir question must be dealt with.

FINANCE. The income of the Undertaking is still increasing, and its position financially and otherwise is most satisfactory.

I am,

Yours faithfully,

CHAS. E. BLAND,

Superintendent.

